

I believe in the liberal use of poison, I have long been convinced that it is hopeless to try and prevent the ingress of insects by this means alone, and shall model my herbarium cases after the new ones devoted to Compositæ in the Gray Herbarium, described in the June number. Such a case is as nearly dust-proof as can be expected, and is tight enough so that a cup of chloroform, set on one of the shelves occasionally, will destroy any insects that may be at work. A suggestion of Prof. Brewer to concave the fronts of the shelves *near the right-hand end*, for lifting out the sheets, and to have the shelves one inch shorter than the sheet, at the back, to allow dust to fall to the bottom, obviating the necessity of brushing out each shelf, is worth acting upon.—WILLIAM TRELEASE.

Corydalis aurea and its allies.—In former years Dr. Engelmann studied this group attentively, and gave me various notes and sketches; but hardly anything has been published except the few memoranda which I incorporated into the Manual. A careful study of the group now made has on the whole confirmed Dr. Englemann's views, but has led to the admission of one species, which he had concluded to be a mere state of *C. aurea*. It will be seen from the following notes that some points remain upon which further information is needed.

The species are conveniently arranged in two groups, as follows:

1. Hood or saccate tip of outer petals crestless, the back at most carinate: flowers golden yellow.

C. AUREA Willd. Commonly spreading and with slender pedicels: spur of corolla barely half the length of the body, somewhat decurved: capsules pendulous or spreading, terete, torulose when dry: seeds turgid, obtuse at margin, the shining surface obscurely reticulated under a lens.

Extends from Lower Canada to British Columbia and Oregon, north to lat 64°, southwestward to Texas, Arizona, and into adjacent parts of Mexico. But *not* into N. E. Asia or Japan. The plant of the Rocky Mountains and westward commonly has longer spurs. Only southward do we find the marked form which Dr. Englemann was naturally disposed to separate as a species, but at length agreed to call

Var. *OCCIDENTALIS* Engelm. in Gray Man. 62. More erect and cespitose, stouter, often with thickened root which Engelmann took to be "subperennial," but probably, like the species, only biennial: flowers rather larger and in a stouter erect raceme, with spur almost as long as the body and commonly ascending: capsules thicker, less torulose, mostly incurved-ascending on short spreading pedicels: seeds less turgid and margins acutish.—*C. montana* Engelm. l. c. and Wood, Bot. 34.

Fendler's New Mexican plant was chiefly the original of this: but it is better represented by *C. Wright's* no. 1309 from near El Paso, by specimens which I myself collected there in the early spring of 1885, by *Pringle's* no. 198 of the same year from Chihuahua, by specimens collected in *Arizona* by Palmer in 1865, by Rusby in New Mexico, and by Hall & Harbour's no. 31 from Colorado, which has been referred to *C. curvisiliqua*. These all approach that species; but the pods seem to be terete, are shorter, and the seeds have the slight markings of those of *C. aurea*.

C. CURVISILIQUA Engelm. l. c. Habit of the preceding variety, and with spiciform raceme of rather larger flowers (over half inch long), the spur as long

as the body: capsules *quadrangular* (inch and a half long, 2 lines thick), incurved and ascending or straightish on very short and stout diverging pedicels: seeds turgid-lenticular, with acute margins and minutely muriculate surface.

The only certain specimens I possess are those of Lindheimer's Texan collection, collected near New Braunfels in 1850 and 1851. Mrs. Bittle once showed me a fine drawing from the living plant, showing the perfectly tetragonal pods. Specimens from W. Texas, without fruit, which may belong here, were collected by Berlandier, Wright, and Girard. It is commended to the attention of Texan botanists.

2. Hood or saccate tip of outer petals (except in cleistogamous flowers) dorsally wing-crested.

*Flowers bright yellow, about two-thirds of an inch long: stem mostly erect.

C. CRYSTALLINA Engelm. l. c. Habit of the preceding: flowers spicate, with spur nearly as long as the body; dorsal crest short, very wide and salient, 3 to 4-toothed: capsules linear-oblong, terete, half or three-fourths inch long, erect on very short pedicels, pruinose when fresh with transparent vesicles (such as beset the leaves of *Mesembrianthemum crystallinum*): seeds acute-margined, the coat minutely tubercular-reticulated.

Prairies and fields of Arkansas and S. W. Missouri. Excellent specimens of this, collected by Prof. F. L. Harvey, in Curtiss's distribution.

**Flowers pale yellow, short-spurred, only a quarter or third of an inch in length: stems diffuse and slender: capsules linear and slender, torulose.

C. FLAVULA DC. Flowers conspicuously bracted and slender-pedicelled: outer petals surpassing the inner; crest very salient, 3 to 4-toothed: capsules pendulous: seeds acutely margined, rugose-reticulated, at least toward the margins.—*C. flavidula* Chapman, Fl. ed. 2, 604, a slip of the pen.

Lake Erie to Virginia, Tennessee, Missouri and Louisiana.

C. MICRANTHA. Flowers short-pedicelled and small-bracted, when full-developed a third of an inch long, narrow, with spur a line or two long, and with rather narrow lunate and entire crests; often with only cleistogamous and much smaller flowers, which are spurless and crestless or only slightly crested: capsules ascending on short or very short pedicels: seeds turgid, obtuse at margin, shining, as in typical *C. aurea*.—*C. aurea*, var. *micrantha* Engelm. in Gray, Man. l. c., only cleistogamous flowers known. *C. aurea*, var. *australis* Chapm. Fl. ed. 2, 604, who had only the normal flowers.

Texas to Missouri and Florida, and at Cape Fear, N. Carolina, *Harvard*, whose specimens show earlier normal and later cleistogamous flowers on same individuals. On the Atlantic coast, from N. Carolina to Louisiana (where the normal form was collected by M. Langlois) this appears to be the only species. In Missouri it is said to grow intermixed with *C. aurea*. Confirmation of this is desirable.—ASA GRAY.

Development of *Ræstelia* from *Gymnosporangia*.—The culture of spores of the *Gymnosporangia* of this country upon different *Pomeæ*, which I have undertaken for several years, has been continued this year by Mr. Roland Thaxter in the Cryptogamic laboratory at Harvard. In my own cultures spermagonia only were produced on the different hosts, but Mr. Thaxter has been more successful, and has been able to produce the æcidia in several cases. His cultures are not yet completed, but I should like to call attention to some